**Algebra 2**
**Unit #7**
**WS #1**

## CLASS EXERCISES

**Is the second inequality in each pair equivalent to the first? Give a reason for your answer.**

**1.** $9x + 14 > 23$;
$9x > 9$

**2.** $-\frac{x}{3} < 6$;
$x > 18$

**3.** $-\frac{2}{5}x < 0$;
$x > 0$

**4.** $5x - 8 \geq 4$;
$5x \leq 12$

**5.** $5x < -15$;
$x > 3$

**6.** $-8x < 24$;
$x > -3$

**Solve and graph.**

**7.** $7x > 581$

**8.** $9z < 855$

**9.** $-6y < 474$

**10.** $-8y > 672$

**11.** $r + 13 \geq 34$

**12.** $r - 15 \leq -11$

**13.** $p - 5 < 27$

**14.** $p + 8 > 18$

**15.** $7 - x \geq 24$

## PRACTICE EXERCISES

**Solve and write the solution set using set-builder notation. Graph the solution set if it is not the empty set.**

**1.** $3x - 6 > 27$

**2.** $3x + 10 \leq 25$

**3.** $5z - 6 > 14$

**4.** $8x - 15 > 73$

**5.** $-18 - 5y \geq 52$

**6.** $14 - 4y \geq 38$

**7.** $-5(4s + 1) < 23$

**8.** $57 - 4t \geq 13$

**9.** $12 < 2(3n + 1) + 22$

**10.** $4(t + 3) \leq 44$

**11.** $2(y - 3) + 7 < 21$

**12.** $4(x - 2) - 6 > 18$

**13.** $8(4z - 1) \geq 344$

**14.** $2(7 + 3x) \geq 86$

**15.** $5x + 7x - 8 > 16$

**16.** $3y + 14y - 5 \geq 354$

**17.** $9r - 12 < 6r + 36$

**18.** $8x + 15 > 15x - 24$

**19.** $3(6 - 5x) \leq 12x - 36$

**20.** $2(7 - 8x) \geq 14x - 46$

**21.** $9(n + 2) > 9(n - 3)$

**22.** $6x - 13 < 6(x - 2)$

**23.** $-6(2y - 10) < 180$

**24.** $-7(3x - 7) > 280$

**25.** $18 - 2(y + 6) < 76$

**26.** $21 - 3(7 - x) > 50$

**27.** $2 - 3z \geq 7(8 - 2z) + 12$

**28.** $17 - 2y \leq 5(7 - 3y) - 15$

**29.** $\frac{2}{3}(x - 12) \leq x + 8$

**30.** $\frac{3}{5}(x - 12) > x - 24$

**31.** $3[4x - (2x - 7)] < 2(3x - 5)$

**32.** $6[5y - (3y - 1)] \geq 4(3y - 7)$

**Solve for $x$.**

**33.** $3ax + 2b < 2ax - 8b$, $a < 0$

**34.** $7ex - 2c > 5ex + 6c$, $e < 0$

**35.** Prove that if $a > b$, then $a - b > 0$.

**36.** Prove that if $a < b$, then $a - b$ ·